D7

PATENT SPECIFICATION

Convention Date (Germany): Oct. 30, 1923.

224,240

Application Date (In United Kingdom): Oct. 30, 1924. No. 25,888/24.

Complete Accepted: March 26, 1925.

COMPLETE SPECIFICATION.

Improvements in or relating to Photographic Apparatus.

I, Dr. Erich Von Schubert, a German national, of 21, Schumannstrasse, Berlin, Germany, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

In taking photographs of subjects of many kinds, for instance, surgical operations, parturitions of man or beast, the emergence of insects from larvæ the actions of shy and wild beasts, the motions of a dancer and the like, it is frequently very difficult or nearly impossible accurately to focus the camera for one particular stage or act, because the "setting" of the subject changes too frequently and suddenly, and each displacement of the camera necessitates fresh focussing and alignment.

According to the invention I use in conjunction with a movable reflex mirror, a mirror or mirrors connected therewith and adapted to throw a beam or beams of light on to the subject to be photographed, the arrangement being such that when the subject is illuminated by what I will call the illuminating mirror or mirrors the reflex mirror reflects a beam of light from the subject in the optical axis of the camera. By adjusting the illuminating mirror the reflex mirror is automatically brought into the right position. The illuminating mirror system may be one which throws coloured light on to the subject, and this coloured light may be light which is non-actinic, or nearly so.

The device may be used for taking single photographs or series of photograps for kinematographic purposes.

The invention is illustrated in the annexed drawing showing by way of example in Fig. 1 an arrangement for use in an operating theatre; Fig. 2 shows the system of mirrors viewed in the direction of the source of light. In Fig. 1 the system of illuminating mirrors is shown in two alternative positions y and z. It is assumed in this case that the subject under operation is to be illuminated by means of artificial light, and that a pair of illuminating mirrors is to furnish this illumination, this pair of mirrors being fixedly connected to the reflex mirror.

A concave mirror c reflects light of the artificial source h towards the illuminating mirrors i, i^1, k, k^1 and r, r^1 which are arranged in pairs, each pair on a horizontal spindle mounted in side walls or members of a frame w. These side walls or members are omitted from the drawing, for clearness. The spindles fit into their bearings with sufficient friction to hold the mirrors at any angle at which they may be adjusted. The mirrors can be adjusted by means of a rod having a hook at one end. To the horizontal spindle of the mirror-pair r, r^1 is fixed a reflex mirror x, preferably a plane mirror. The frame w runs on rails b, upon which the photographic camera u may also be capable of travelling. The reflex mirror x is perpendicular to the illuminating mirrors r r^1. When the angle from which the subject is to be photographed is changed, the mirror carriage is shifted and all the illuminating mirrors are adjusted so that the beams again meet at s. The adjustment of the mirror pair r r^1 then automatically sets the reflex mirror x for the fresh picture.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. Photographic apparatus having in combination with a movable reflex mirror an adjustable illuminating mirror or

[Price 1/-]

mirrors so connected to said reflex mirror that a beam of light from an object illuminated by said illuminating mirror or mirrors is projected by said reflex mirror in the optical axis of the camera.

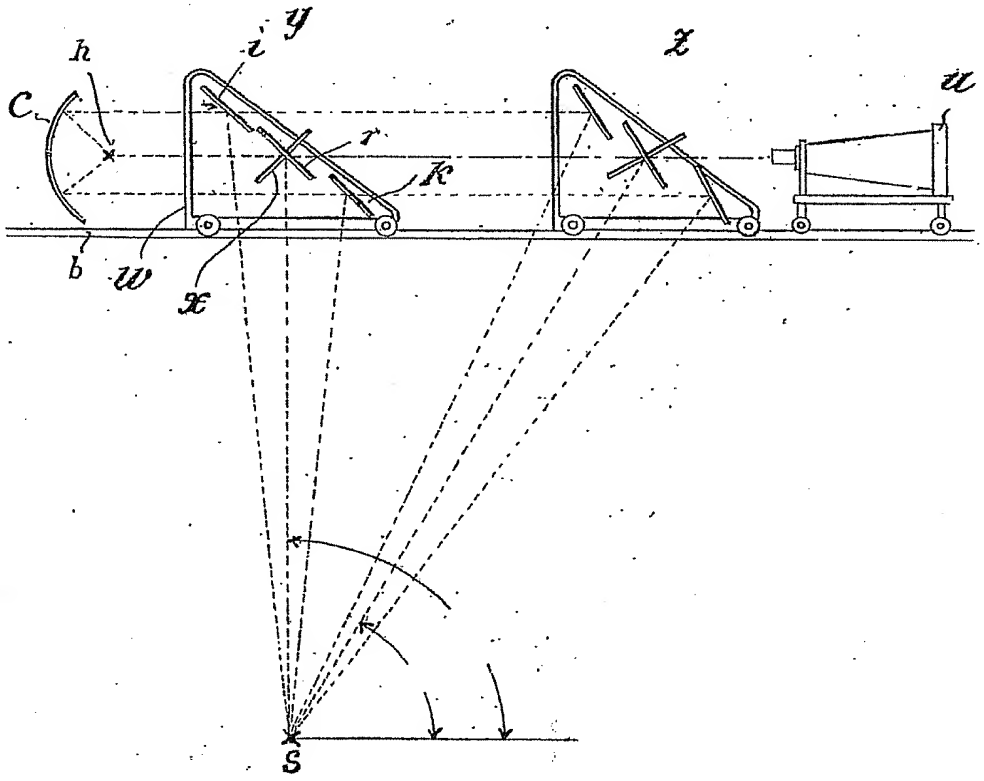
2. Apparatus as claimed in Claim 1, the illuminating mirror system being a system adapted to project coloured light not interfering with the normal illumination of the object.

Dated this 30th day of October, 1924.

For the Applicant,
HERBERT HADDAN & Co.,
Chartered Patent Agents,
31 and 32, Bedford Street, Strand,
W.C. 2, London.

Redhill: Printed for His Majesty's Stationery Office, by Love & Malcomson, Ltd.—1925.

Fig. 1.



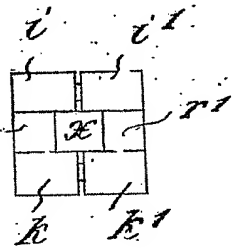


Fig. 2. r

Malby&Sons, Photo-Litho